

CLAIMS

1. A closed single-use system for mixing, storing and homogenizing liquids, comprising an assembly constituted by a rigid container (1) fitted with a non-invasive pump (4), said container (1) enclosing a generally parallelepipedic single-use bag (2), characterized in that the lower face of the bag includes an orifice for the liquid to discharge to the outside of the bag, the upper face includes an orifice for the liquid to return through which said liquid returns to the inside of the bag, said orifices are connected in fixed manner by means of an external mixing duct (3) which is inserted into the pump (4) which, during operation, allows the closed-circuit circulation of the liquid taken from the bottom of said bag (2), the pump (4) being open so that the mixing duct (3) can be inserted into it and extracted from it.
2. A system according to claim 1, characterized in that the bottom (7) of the container (1) is fitted with an elongated slit (8) allowing the insertion and the passage of the mixing duct (3).
3. A system according to claim 1 or 2, characterized in that it includes a device (20, 27) which can be shifted parallel to the bottom of the container in order to partially close the slit (8).
4. A system according to one of claims 1 to 3, characterized in that the container (1) includes one or two side doors (5, 6) in order to allow the installation of the bag (2).
5. A system according to one of claims 1 to 4, characterized in that the container (1) is fitted with a bottom wall (7) which can be shifted horizontally, fitted with one or more elongated slits.
6. A system according to one of claims 4 and 5, characterized in that the flaps of the side doors (5, 6) comprise a vertical U-section, the openings facing each other, into which a profiled plate (21) is slid and adjusted in order to keep the flaps of the side doors (5, 6) held in the closed position.
7. A system according to claim 6, characterized in that the central part of the profiled and adjusted plate (24) is preferably coplanar with the internal surface of the two side doors (5, 6).

8. A system according to one of claims 4 to 7, characterized in that the flap of a side door (5, 6) includes a gate (23) fitted with fastenings cooperating with systems provided on the other side door (5, 6) in order to keep said flaps in the closed position.

5           9. A system according to claim 8, characterized in that the central part (22) of this gate (23) is coplanar with the internal surface of the two side doors (5, 6) of the container (1).

10           10. A system according to one of claims 4 to 9, characterized in that the flaps of two side doors (5, 6) comprise a U-section, the openings being turned away from each other, into which a profiled plate is slid and adjusted (24) comprising two U-bends, the openings facing each other, in order to keep the flaps of the side doors (5, 6) in the closed position.

15           11. A system according to claim 10, characterized in that the central part (22) of the profiled and adjusted plate (24) is coplanar with the two side doors (5, 6) and forms a channel in which the mixing duct (3) can be installed in order to protect it.

12. A system according to one of claims 4 to 11, characterized in that a protection of the mixing duct (3) is integrated in a door (6) of the container and includes a gate flap (25).

20           13. A method for mixing compounds, characterized in that, in a rigid container (1) fitted with a non-invasive pump (4), a single-use bag (2) is installed, the lower face and the upper face of which are connected in fixed manner by means of a mixing duct (3), the duct (3) is inserted into the non-invasive pump (4), and said pump is actuated in order to produce a closed-  
25 circuit circulation of the liquid or liquids introduced into the container (1) in order to carry out the mixing.

14. A method according to claim 13, characterized in that the pump (4) causes the mixture to circulate with a flow rate of 6 to 1500 litres per minute.